

## SAE OnBoard User's Manual v2.0.0.X



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## Overview

SAE OnBoard is a commercially available ELD designed as a solution that meets the Hours of Service (HOS) requirements and route management needs of the foodservice industry, allowing SAE to turn the ELD disruption into your advantage by building an intelligent solution so you have the technology you need to be more agile, responsive and competitive – Open and flexible to meet you where you are today – and relentlessly innovative to help you get ahead of what's next.

## Major Features

- Faster-time-to-value – Realize value quickly with simple installation, in place upgrades, and automated log entries
- Efficient Operations – Quickly get things done with one-click features and straight forward console
- Support for Multiple Systems – Edit driver logs with the in-cab tablet or web-based application
- Data Analytics – Review current and historical data through dashboards and reports

## ECM Adaptor

- Easy Installation – Small adaptor plugs directly into Truck Bus (J1939, J1708)
- Connecting adaptor cable provides pass through connection from truck bus
- Bus readings are relayed to the tablet and then forwarded on to the host for storage and retrieval in management reports and digital dashboards
- Communicates with tablet through Bluetooth

## OnBoard In-Cab

- Provides easy to use touch screen interface
- Runs on Android (Marshmallow v6.0 or newer) tablets approved by SAE
- Remains cradled in the cab of truck
- Stores and forwards information in real-time to the SAE OnBoard host

## OnBoard Geo-Location
















- Near Real-time Location of Trucks – transmits breadcrumb GPS location to the OnBoard host on a scheduled basis
- Last known equipment location and actual route driven can be viewed graphically

## Route Navigation

- Tablet provides turn-by-turn voice instructions
- Route stop sequence can be changed by the Driver, and the turn-by-turn navigation will reflect the new route
- The route is calculated for each route segment using real-time least cost routing software that accounts for current road conditions
- Adjusted stop ETA is transmitted back to the host for customer arrival notification with external systems
- Driver Performance report compares the mileage planned segment to the driven segment to identify variances

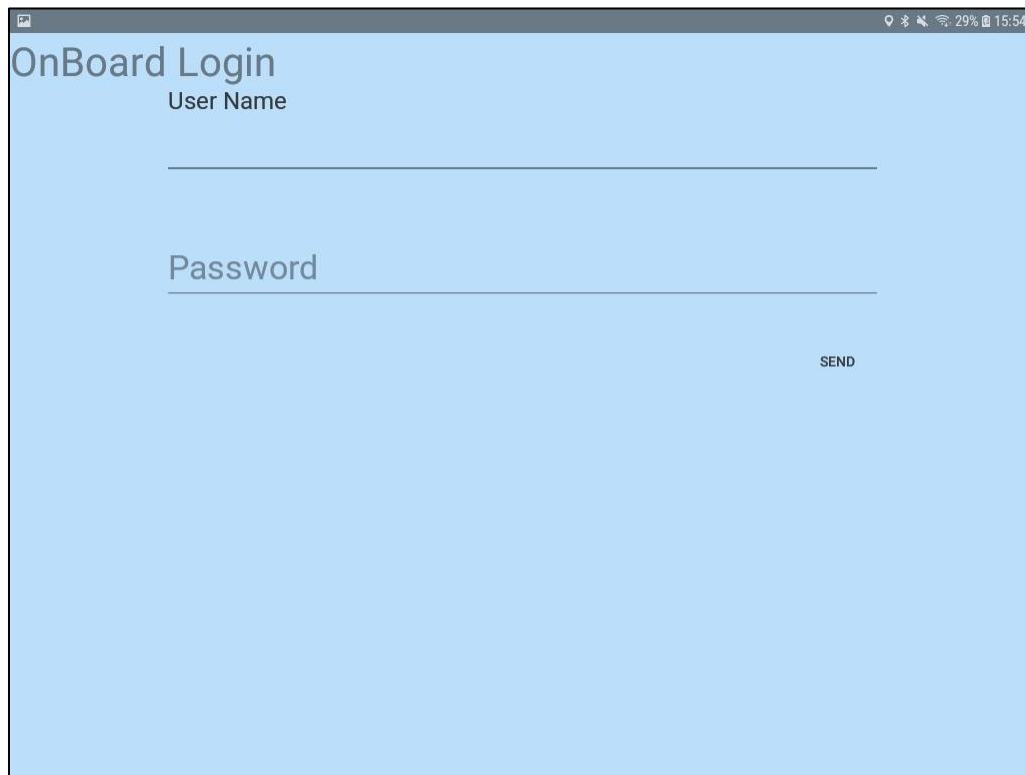
## SAE OnBoard Icons

The following icons are used on the SAE OnBoard display and are consolidated here for easy reference:

-  – New item/entry button
-  – New item/entry button
-  – Open Dropdown Selection button
-  – Shipping Document button
-  – Review button
-  – Close button
-  – Edit Duty Status Log button
-  – Home button
-  – Roadside Inspection button
-  – Menu button
-  – Driver button
-  – Remove item/entry button
-  – Remove item/entry button
-  – Vehicle button
-  – Trailer button

## Login

When SAE OnBoard is started, the Login display is activated as shown in Figure 1. A Driver may then login by entering a valid User Name and Password, and then touching the SEND button.



*Figure 1: Login Display*

A Team Driver (i.e., Co-Driver) may login with a User Name and Password in a similar fashion once the first Driver has logged on. This is performed by adding a second Driver from the Menu button.

Once a Driver has logged in to SAE OnBoard in a particular Vehicle, if there is any Unidentified Drive Time recorded by SAE OnBoard for that Vehicle, then the Driver is presented with details about these drive times and allowed to claim any belonging to the Driver.

## Duty Status

After a Driver completes the login process, the Duty Status display is shown (see Figure 2) which provides the Driver with their current Duty Status, Remaining Time, Route Information (when appropriate), Diagnostic and Malfunction Indicators, and more.

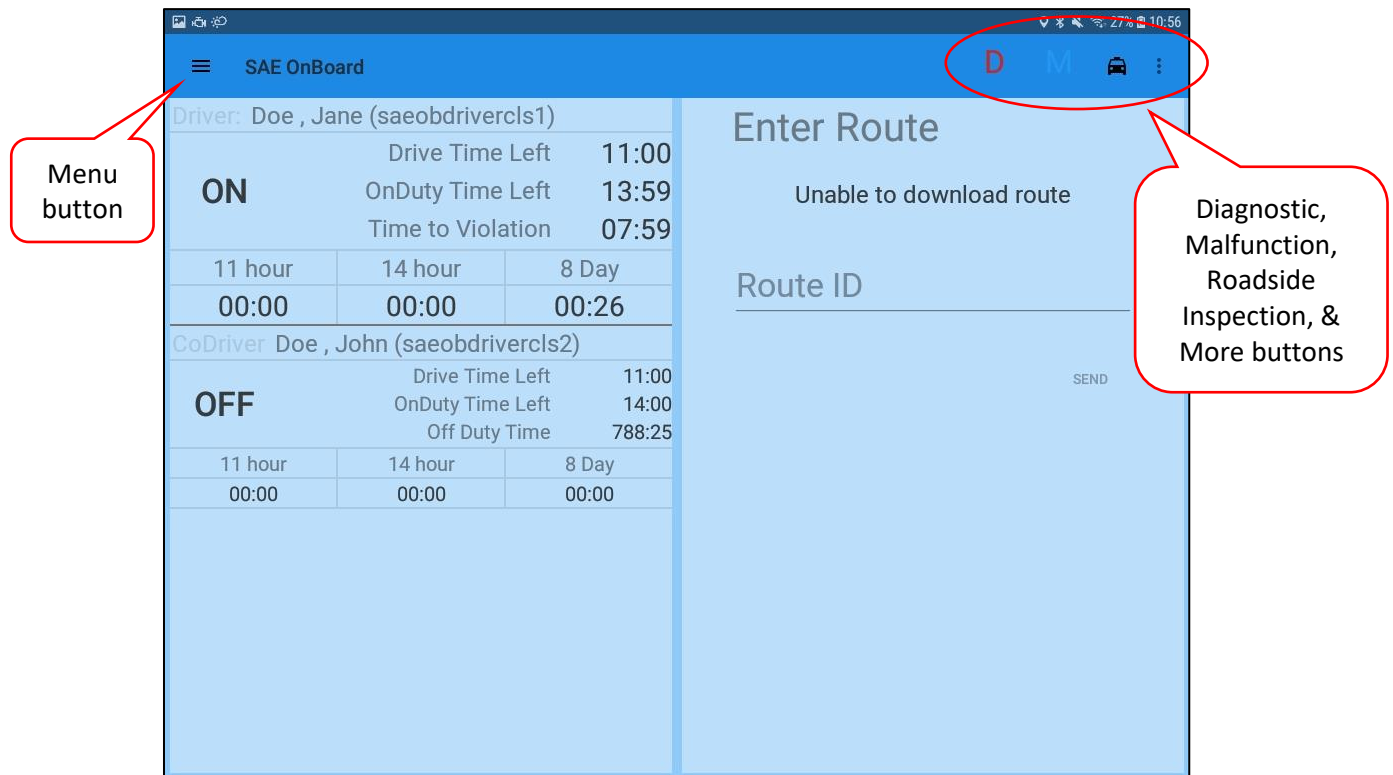


Figure 2: Duty Status Display with Team Drivers

Other features of SAE OnBoard are accessible from this display such as Changing Duty Status, Reviewing/Editing the Duty Log, Responding to Edit Requests, Displaying/Transmitting the Duty Log for a Roadside Inspection, etc.

The Menu button (stack of 3 short horizontal lines) near the upper left corner of the Duty Status display allows the Driver to access additional features of the SAE OnBoard application.

The buttons in the upper right corner of the display allow the Driver to activate the Diagnostic (D) and Malfunction (M) Conditions display, the Audit or Roadside Inspection ("police car" icon) displays, or the More ("...") display.

## Change Duty Status

To change the Duty Status from the Duty Status display, touch the current Duty Status to activate the Change Duty Status display as shown in Figure 3.

Figure 3: Change Duty Status Display

Touch the desired status value to change the current Duty Status. Only those Duty Status values that are currently available may be selected. If desired, also enter a comment.

Then, touch the SAVE button to change the status and return to the Duty Status display as shown below.

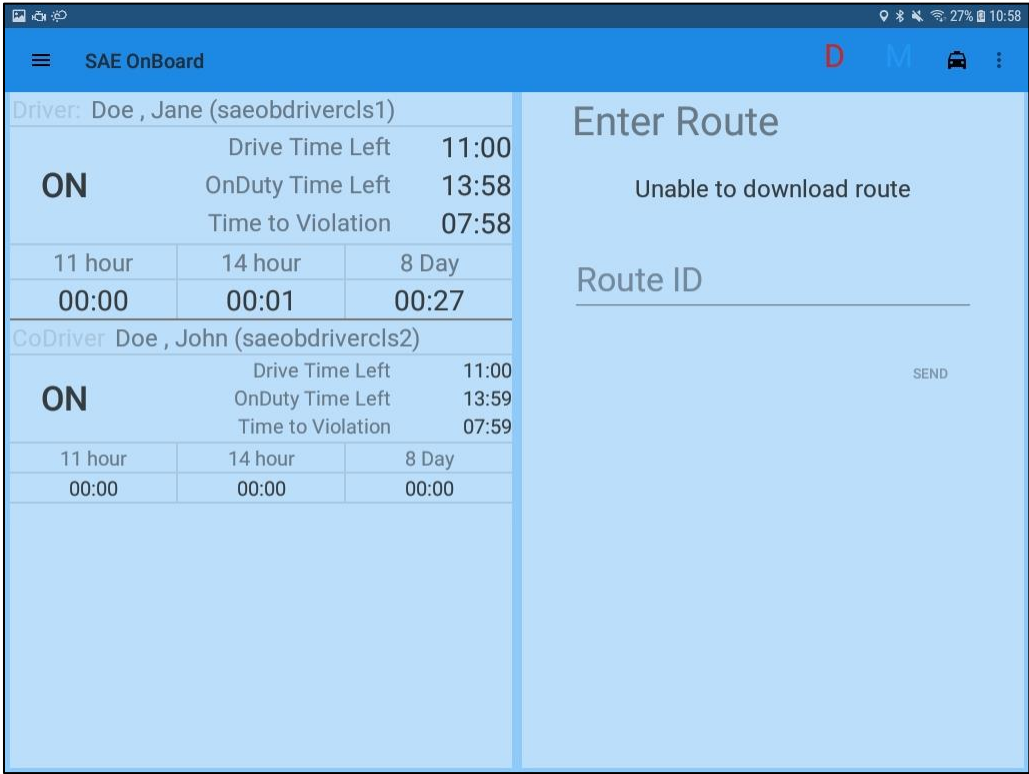


Figure 4: Team Drivers (both On-Duty)

The Duty Status display now shows both Team Drivers with an On-Duty status.



## Duty Log

A Driver may review their Daily Log by touching the Menu button followed by the Review Daily Log button. The Review Daily Log display appears as shown in Figure 5.

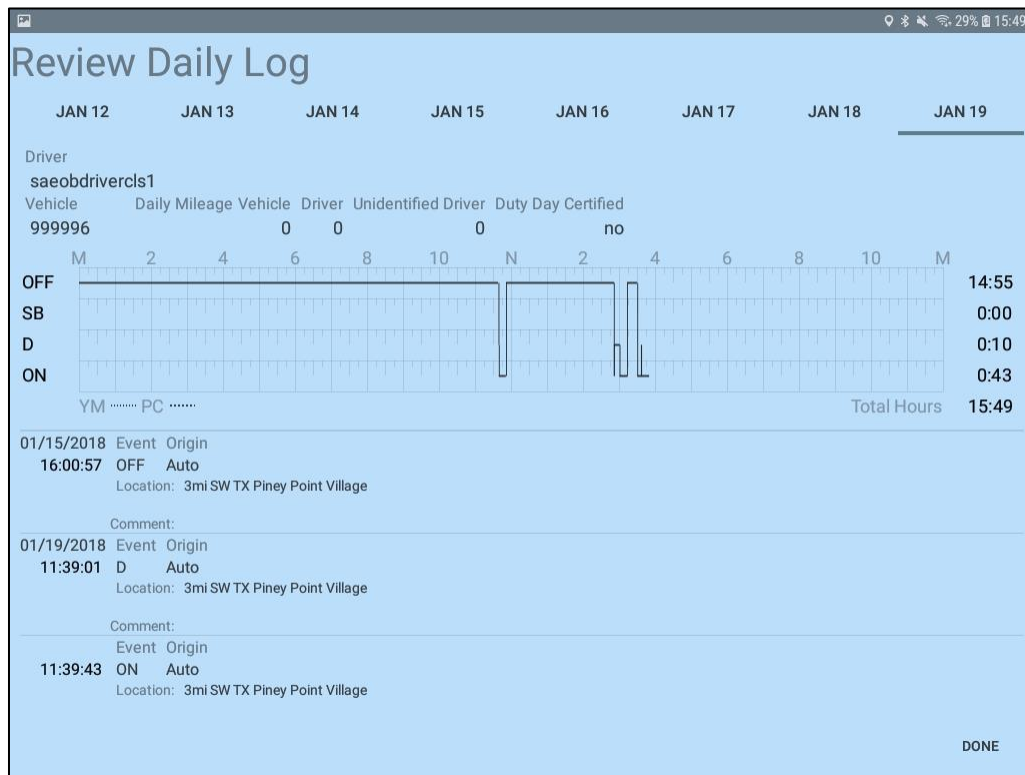


Figure 5: Review Daily Log

Initially, the current Duty Day is shown. Prior days may be selected by touching the Date button (e.g., JAN 15 in the screenshot above) across the top of the display, or by swiping left/right to move one day at a time. When finished reviewing the Daily Log, touch the DONE button to return to the Duty Status display.

## Review and Edit Duty Logs

At times, Drivers may need to edit their Duty Status Log. Editing is started by touching the Menu button (see Duty Status display) which opens the side menu as shown in Figure 6.

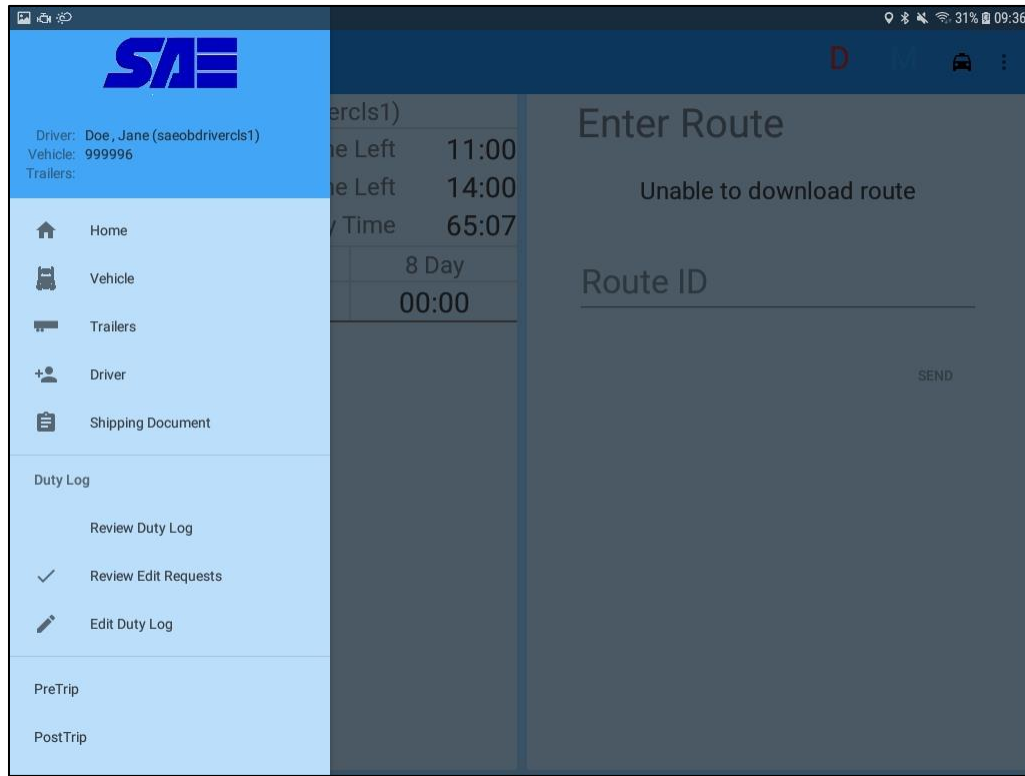


Figure 6: Activating the Edit Driver Log Display

Touch the “Edit Duty Log” button to activate the editing display shown in Figure 7.

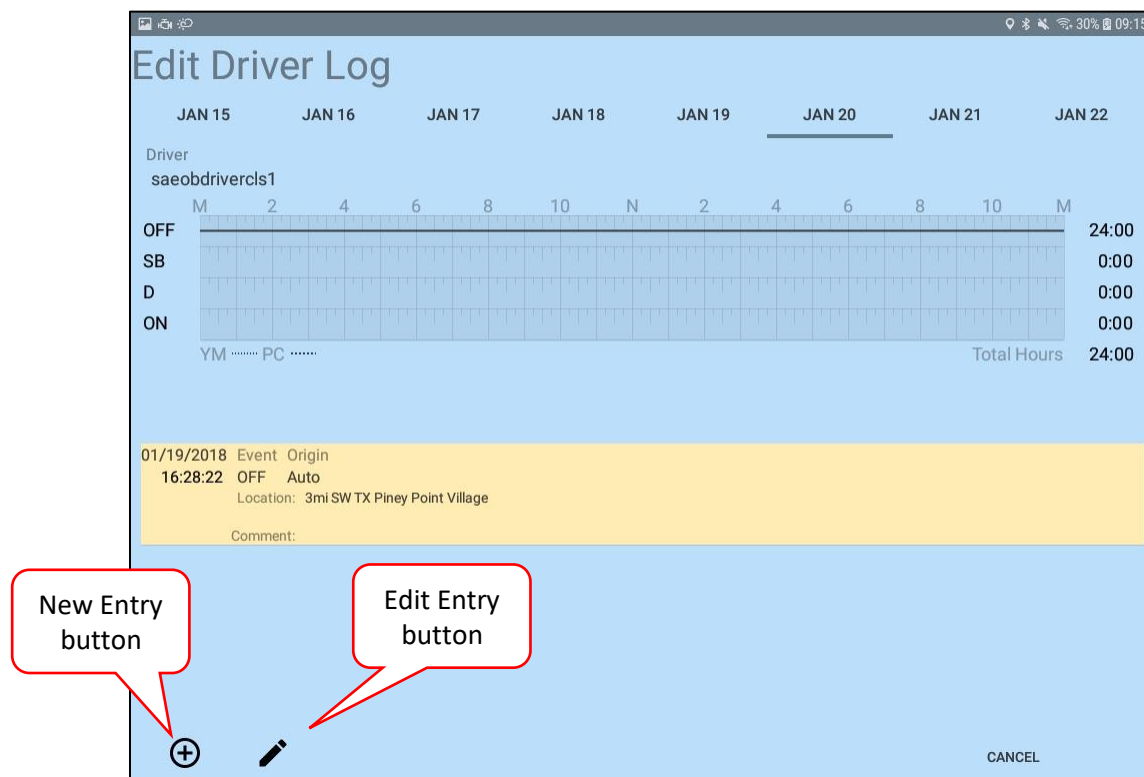


Figure 7: Edit Duty Log

The following example adds a missing On-Duty and missing Off-Duty status change to the Driver's log. Touching the New Entry button (i.e., the plus sign) near the lower left corner of the display activates the new status entry display as shown in Figure 8.

The screenshot displays the 'Edit Driver Log' application interface. At the top, a date range from JAN 15 to JAN 22 is shown, with JAN 20 selected. Below this, the 'Date' field is set to 1/20/2018 8:00:00 AM and the 'Status' is set to ON. The 'Driver' field contains 'saeobdrivercls1' and the 'Co-Driver' field is empty. The 'Vehicle' field is 999996, the 'Trailer' field is 'No Trailer', and the 'Shipping Document' field is 'none'. The 'Location' field is 'home terminal' and the 'Comment' field is 'came in on the weekend'. Below these fields, a log entry for 01/19/2018 is shown with a status change from OFF to ON at 16:28:22, with the location '3mi SW TX Piney Point Village'. A new entry for 01/20/2018 is being added, showing a status change from OFF to ON at 08:00:00, with the location 'home terminal' and the comment 'came in on the weekend'. The interface includes a plus sign icon for adding new entries and buttons for DISCARD, CANCEL, and APPLY at the bottom right.

Date	Status	Driver	Co-Driver	Vehicle	Trailer	Shipping Document	Location	Comment
1/20/2018 8:00:00 AM	ON	saeobdrivercls1		999996	No Trailer	none	home terminal	came in on the weekend

Figure 8: Insert Missing On-Duty Status

The fields have been filled in with appropriate values (e.g., comment, shipping document, etc.) to add an On-Duty status at 8 AM. Touching the APPLY button (near the lower right corner of the display) completes the entry of this status change.

Next, the same process is repeated to add the corresponding Off-Duty entry as of 10 AM as shown below in Figure 9.

The screenshot shows the 'Edit Driver Log' interface. At the top, a date range from JAN 15 to JAN 22 is displayed, with JAN 20 selected. Below this, the 'Date' is set to 1/20/2018 10:00:00 AM and the 'Status' is set to OFF. The 'Driver' field is populated with 'saeobdrivercls1'. The 'Vehicle' field shows '999996' and the 'Trailer' field shows 'No Trailer'. The 'Shipping Document' field is empty. The 'Location' field is set to 'home terminal'. The 'Comment' field contains 'went home at 10am'. Below these fields, a list of events is shown for 01/19/2018 and 01/20/2018. The event for 01/20/2018 at 10:00:00 is highlighted in yellow, showing 'OFF' status and 'Driver' origin. At the bottom right, there are buttons for 'DISCARD', 'CANCEL', and 'APPLY'.

Figure 9: Insert Missing Off-Duty Status

Touching the APPLY button completes the entry of the Off-Duty status change as shown in Figure 10.

The screenshot shows the 'Edit Driver Log' interface after the 'APPLY' button has been touched. The date range at the top remains JAN 15 to JAN 22, with JAN 20 selected. The 'Driver' field is still 'saeobdrivercls1'. Below the driver information, a timeline view is displayed for January 20, 2018. The timeline shows a grid with hours from 0 to 24. The status for the day is 'OFF' from 08:00 to 10:00, and 'ON' from 10:00 to 22:00. The 'Total Hours' is displayed as 24:00. The event list below the timeline shows the same events as in Figure 9, with the 10:00:00 event highlighted in yellow. At the bottom, there are buttons for 'CANCEL' and 'APPLY'.

Figure 10: Apply Duty Status Edits

Touching the APPLY button again and then the SAVE button (also in the lower right corner of the display) completes the addition of the On-Duty and Off-Duty status changes as shown in Figure 11.

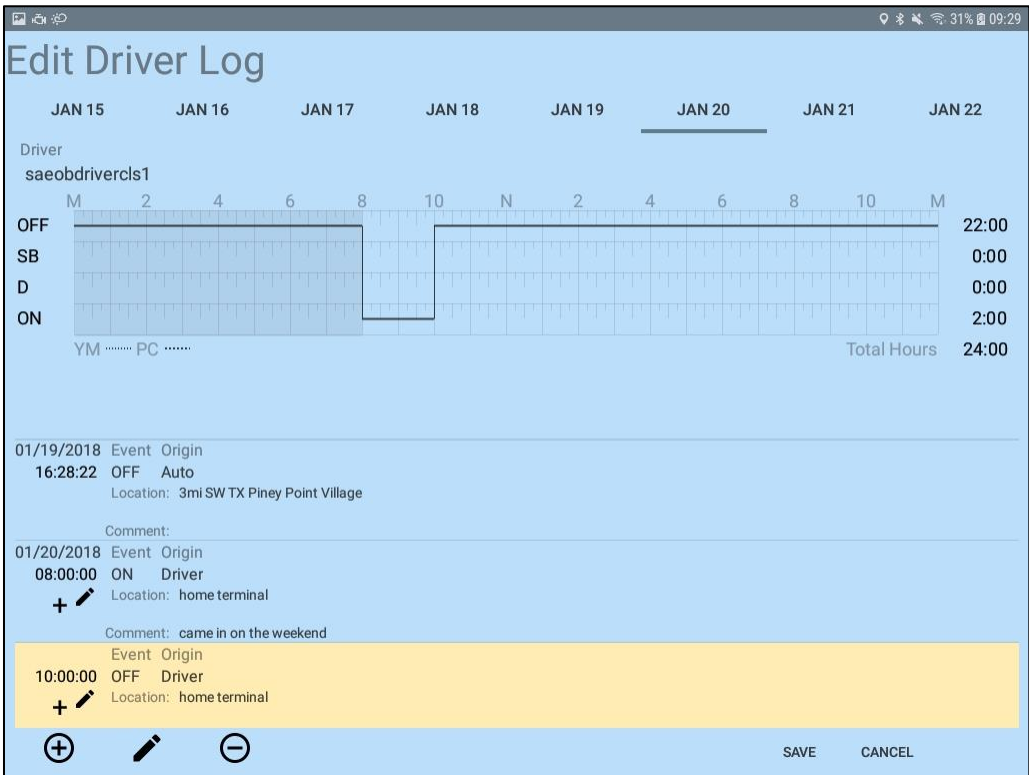


Figure 11: Completed Edits to Duty Day

When the changes are saved, the Driver is prompted to certify this change to a prior duty day as shown in Figure 12.

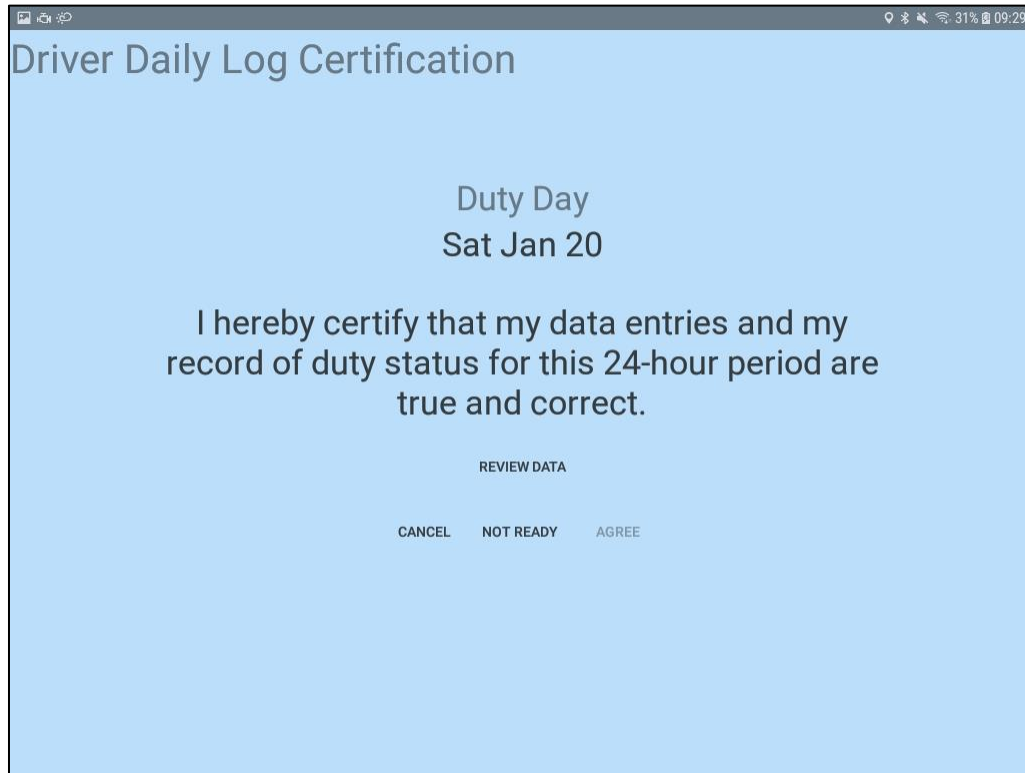


Figure 12: Certification Prompt for Prior Day Edits

Please refer to the section titled, "Duty Status Log Certification" for descriptions of the Certification displays.

### Approve Carrier Edits

If there are any Carrier Edits that have been requested prior to the Driver Login process, a prompt is presented as shown in Figure 13 allowing the Driver to review and accept or reject the suggested edits.

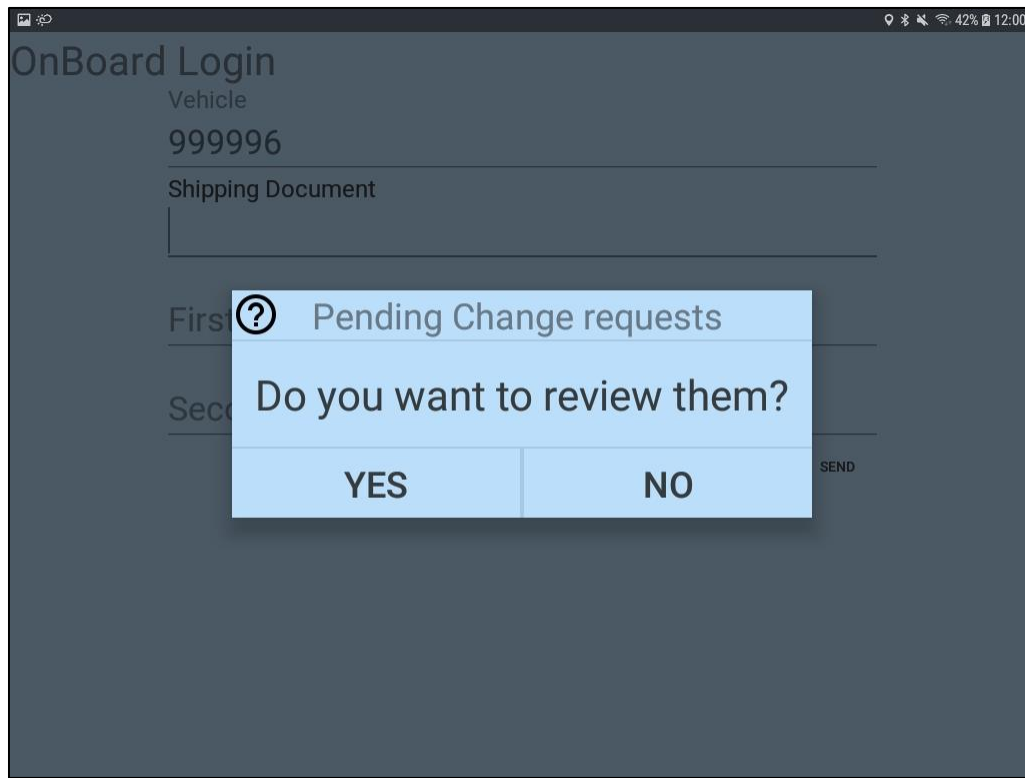


Figure 13: Carrier Edit Request Prompt



Answering YES above allows the Driver to review the Suggested Carrier Edits and accept or reject them as desired as shown in Figure 14.

The screenshot displays a mobile application interface titled "Requested Changes". At the top, it says "Edit Request 1 of 1". Below this, there is a table with two columns: "Date" and "Status". The first row shows "1/19/2018 11:39:43 AM" and "ON". The second row shows "1/19/2018 11:45:00 AM". Below the table, there are fields for "Driver" (Doe, Jane), "Vehicle" (53002), and "Location" (3mi SW TX Piney Point Village). A "Comment" field contains the text "drove a little longer". At the bottom, there are four buttons: "CANCEL", "SKIP", "ACCEPT", and "REJECT".

Date	Status
1/19/2018 11:39:43 AM	ON
1/19/2018 11:45:00 AM	

Driver  
Doe, Jane

Vehicle  
53002

Location  
3mi SW TX Piney Point Village

Comment  
drove a little longer

CANCEL SKIP ACCEPT REJECT

Figure 14: Carrier Edit Request Review

Touch the ACCEPT button to accept the change, or touch the REJECT button to prevent the change from being applied to the log.

Each suggested change may be skipped by touching the SKIP button, or the entire review process can be terminated by touching the CANCEL button.

### Duty Status Log Certification

Each Driver using SAE OnBoard is required by regulations to certify their Daily Duty Status Log at the end of their Duty Day. There are several times when the Driver is asked to review and certify their log with a prompt like the one shown in Figure 15 below.

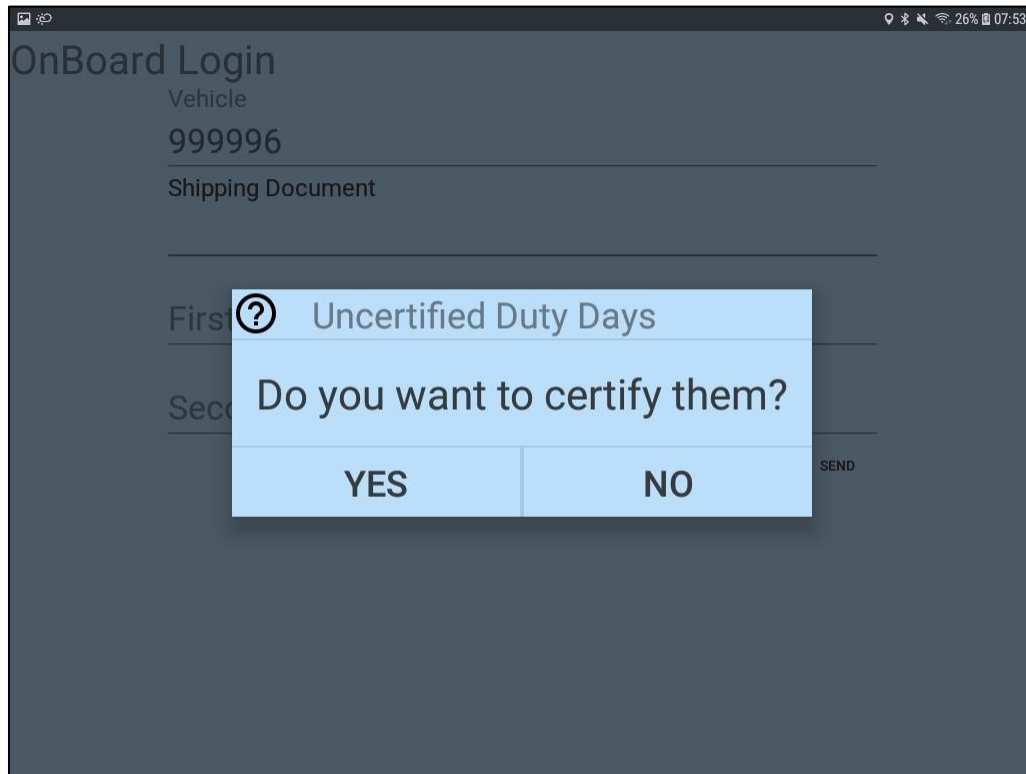


Figure 15: Certify Duty Days Prompt

This question may be presented during the login process if there are prior days that have not been certified, or during the logoff process in order to certify the current or prior Duty Days.

When a Driver chooses to review and certify days in their log, a display similar to that shown in Figure 16 is presented.

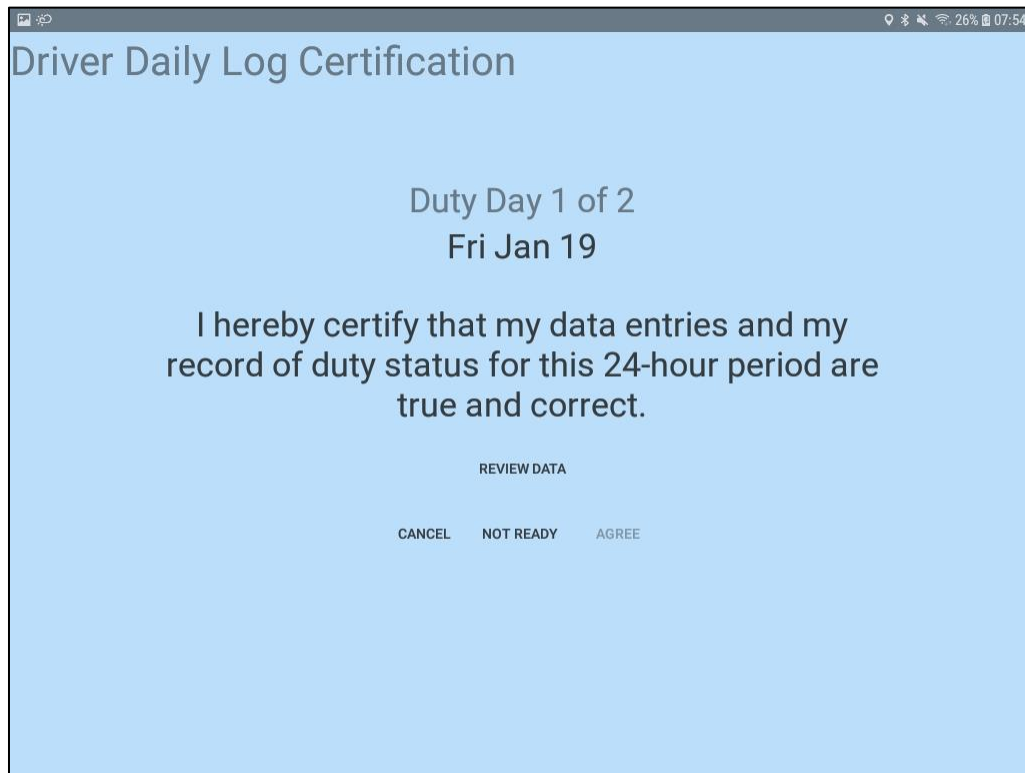


Figure 16: Certify Duty Day

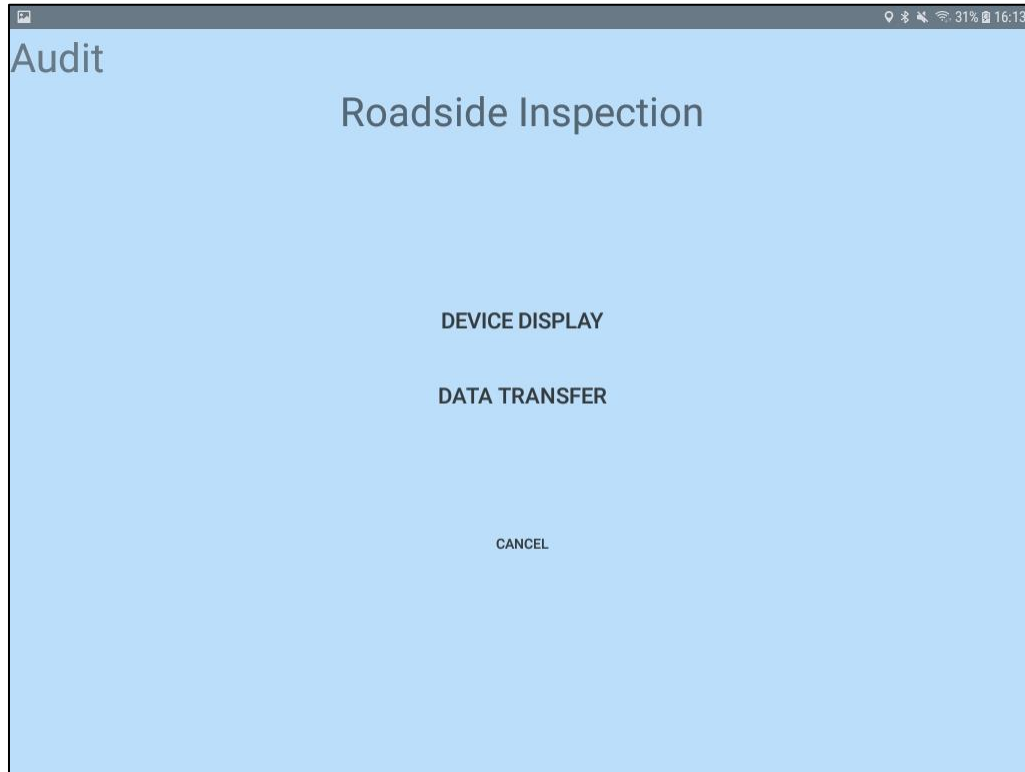
The Driver must review the day's log by touching the REVIEW DATA button before the AGREE button is enabled. Once the day's log has been reviewed and is correct, touching the AGREE button provides the Driver's certification of the Duty Status Log for that day.

Touching the NOT READY button allows the Driver to continue on with the current process (e.g., Login, Logout, Certification of another Duty Day).

Touching the CANCEL button allows the Driver to cancel the current process (e.g., Login, Logout, Certification of another Duty Day) completely.

## Roadside Inspection

When a Driver is involved in a Roadside Inspection, there are audit displays that can be activated and shown to the Inspecting Officer. These displays are activated by touching the Roadside Inspection button (i.e., the “police car” icon) near the upper right corner of the main Duty Status display. After entering the Driver’s Password for confirmation, the following display in Figure 17 is presented.



*Figure 17: Roadside Inspection*

Touching the DEVICE DISPLAY button activates the Audit display of the Driver’s Duty Status Log. Touching the DATA TRANSFER button allows the Driver to select the type of data transfer preferred to send.

Touching the CANCEL button returns to the main Duty Status display.

## Display Driver Duty Status Log

When the DEVICE DISPLAY button is touched on the Roadside Inspection display, the Audit Duty Status Log display is activated and a screen similar to that shown in Figure 18 is presented.

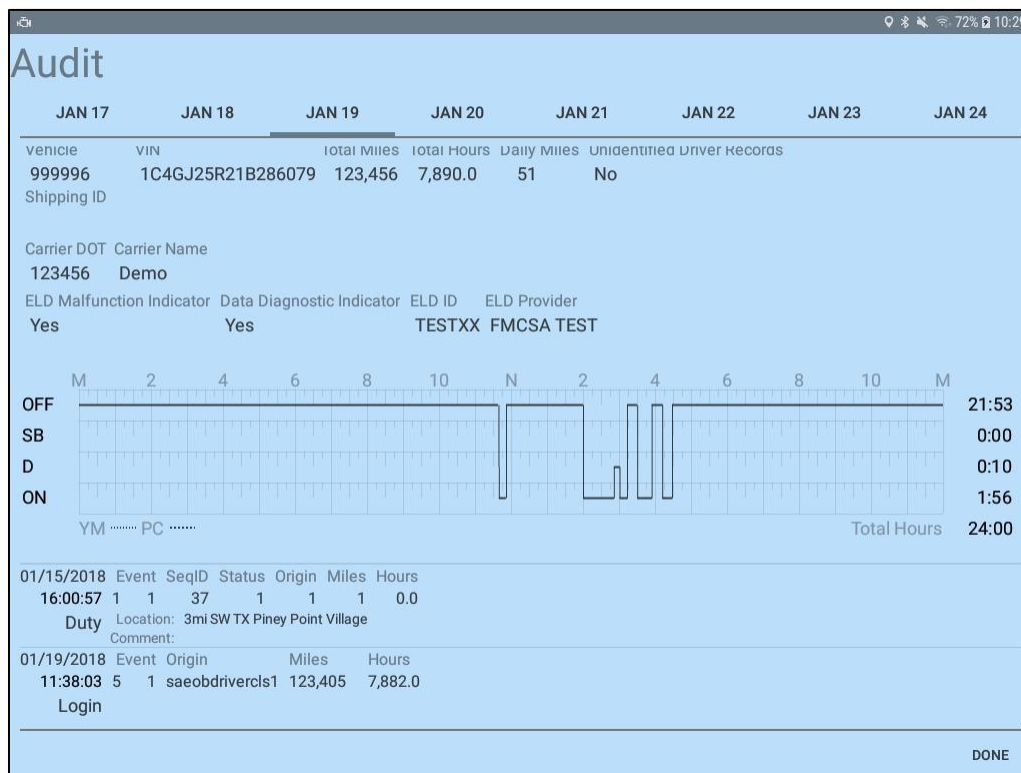


Figure 18: Roadside Inspection – Audit Duty Log

This display initially shows the current Duty Day and may be scrolled up and down by swiping your finger up and down on the screen. Prior duty days may be selected by touching the Date button across the top of the display, or by swiping left/right to move one day at a time.

When the inspecting Officer is finished reviewing the Duty Log, touch the DONE button to return to the Duty Status display. Again, the Driver's password will be required to return to normal operation of the SAE OnBoard device.

## Transfer Driver Duty Status Log

When the Roadside Inspection Officer requests the transfer of the Driver's Duty Status Log, the data may be sent using either Email or Web Services as the transport mechanism by touching the appropriate button on the display as shown on the Data Transfer Select display in Figure 19.

Figure 19: Roadside Inspection – Data Transfer Selection

The Driver or the Officer may enter a comment for the data transmission. Once a comment has been entered, touch the TRANSFER button to initiate the data transfer to the Federal Motor Carrier Safety Administration (FMCSA) using the selected transfer mechanism.

Touch the CANCEL button to return the main Duty Status display without performing the data transfer.

The Driver's password is always required in order to return to the main Duty Status display.

## Logout

To logout of SAE OnBoard, touch the Menu button and then touch the Driver button to activate the Add/Remove Drivers Display as shown in Figure 20.



Figure 20: Add/Remove Driver Display

Touch the Remove button (⊖) to the right of the Driver's name to begin the logoff process.

The Driver must answer the Post Trip Inspection prompt with “YES” in order to continue the logoff process as shown in Figure 21.

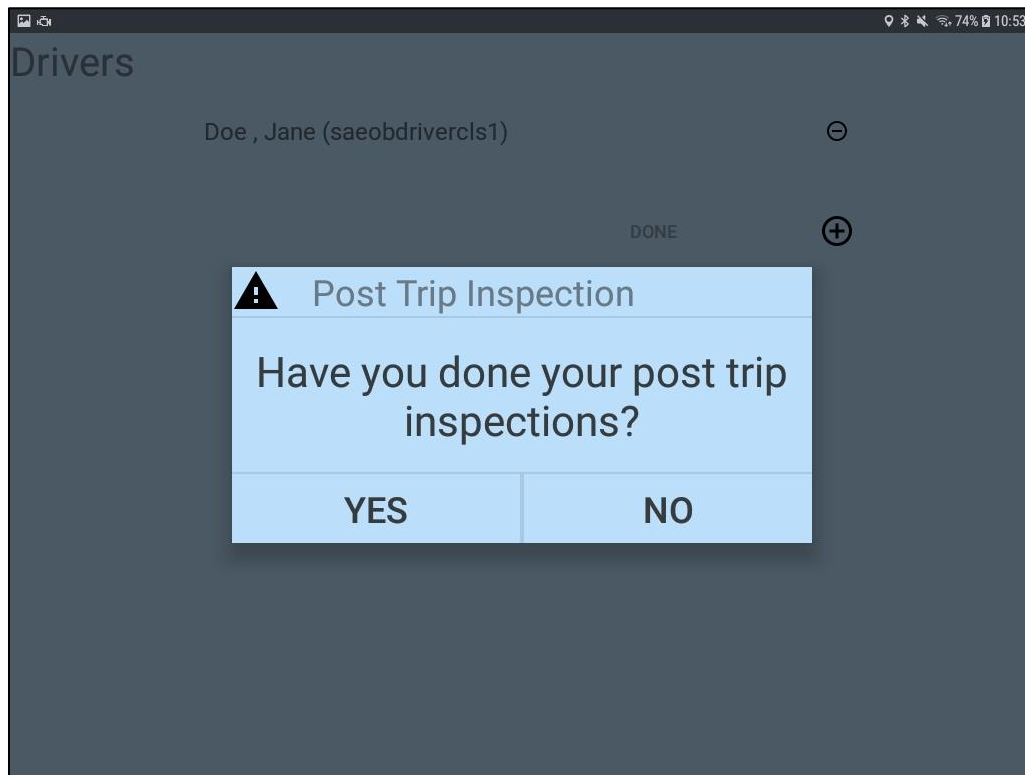


Figure 21: Post Trip Inspection Prompt

Next, the Driver is allowed to their log for today as shown in Figure 22.

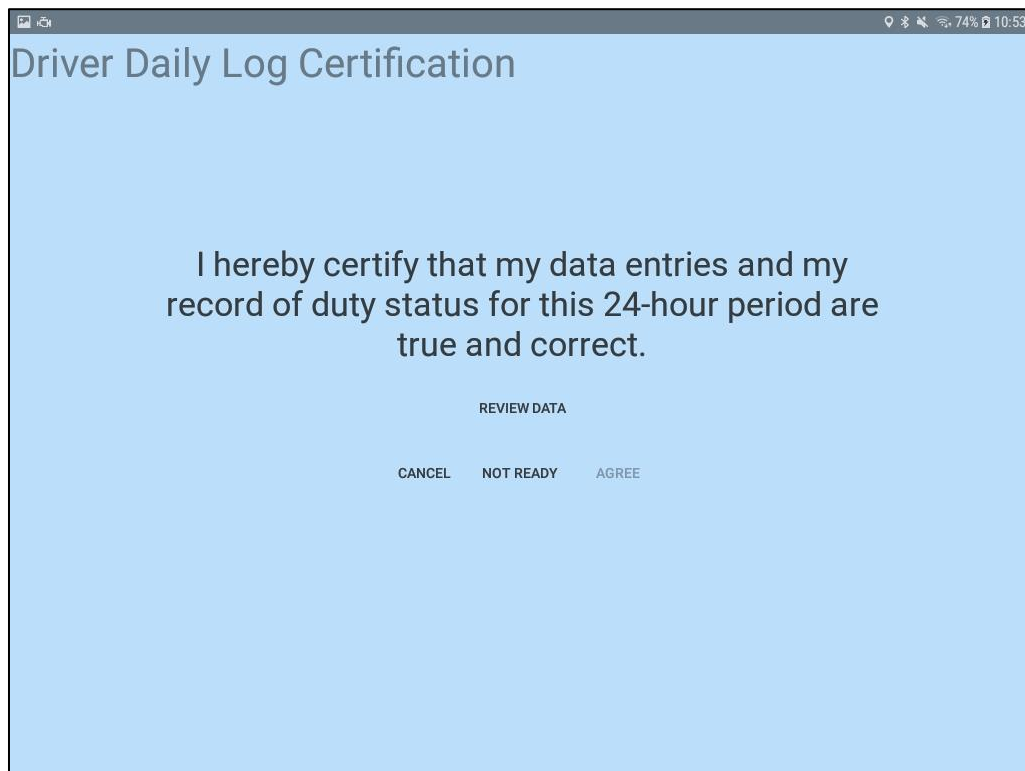


Figure 22: Driver Daily Log Certification Display



If there are any additional uncertified Duty Days for the Driver, a prompt appears to certify those days, too.

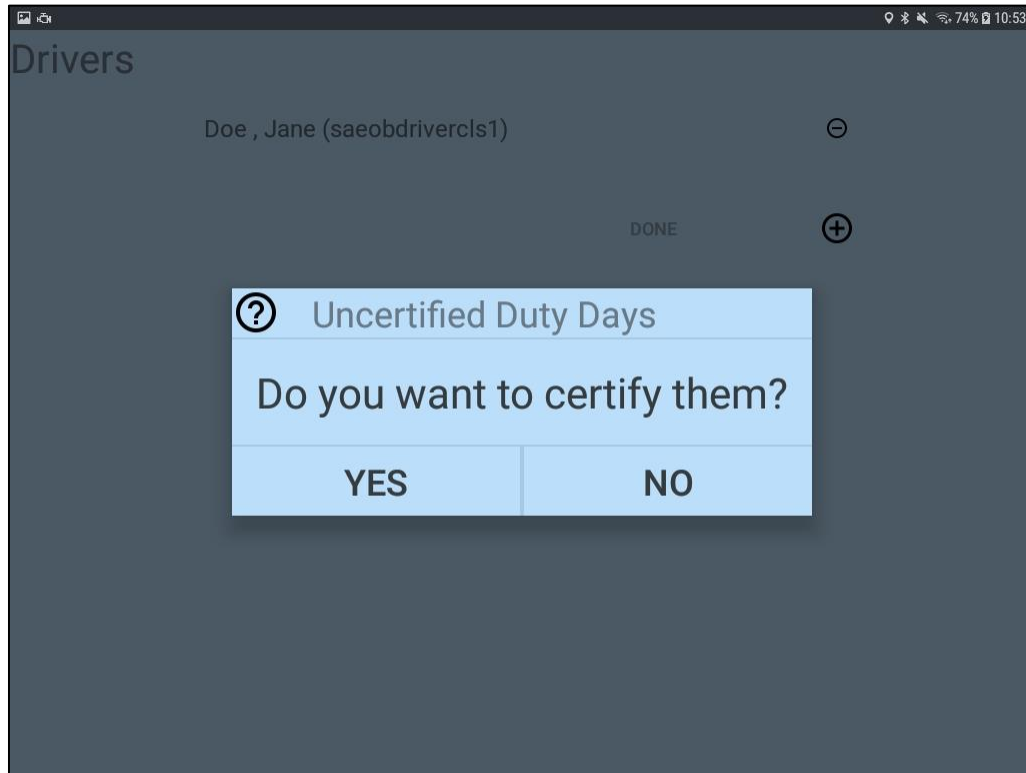


Figure 23: Uncertified Duty Days Prompt

Once certification of prior Duty Days is complete, the Logon display appears.

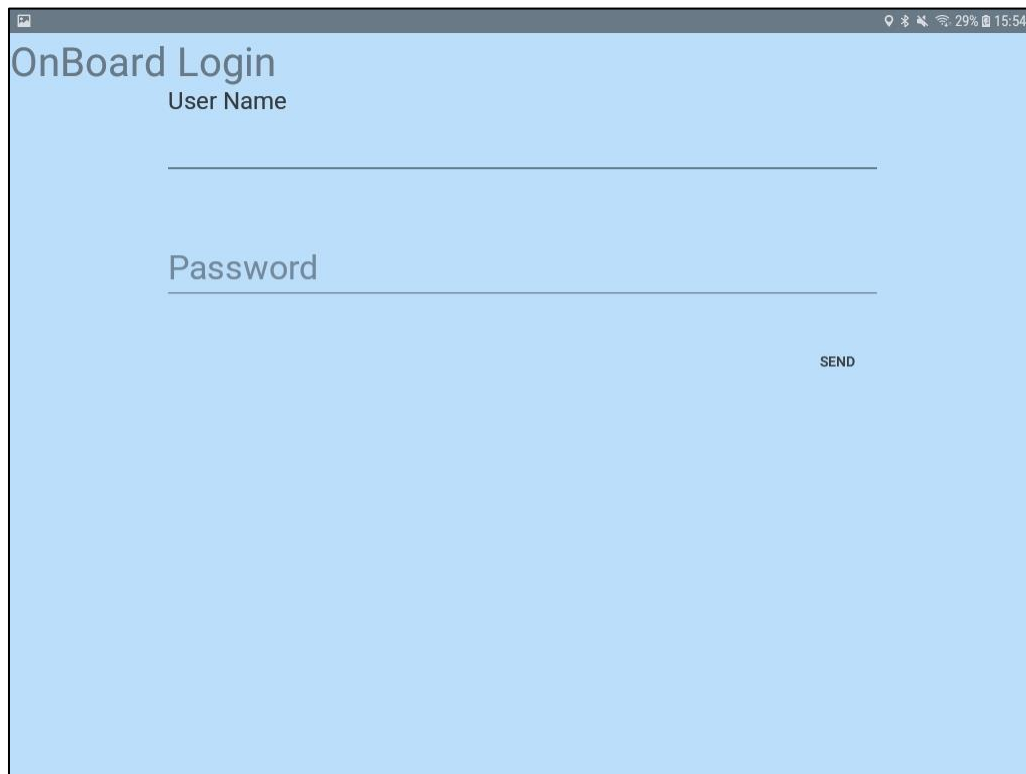


Figure 24: Logon Display